



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

The Patent Application of

Youn-joon Sung et al.

Application No.: 10/813,157

Filed: March 31, 2004

For: LASER DIODE AND METHOD OF  
MANUFACTURING THE SAME USING  
SELF-ALIGN PROCESS

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## STATUS INQUIRY

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

On May 8, 2007 Applicants filed an Amendment After Final and a Petition to Withdraw Restriction Requirement. PAIR indicates that the last recorded transaction occurred on March 13, 2007, which is the mailing of the Final Rejection. Enclosed herewith are copies of the filed response and petition along with a copy of the stamped post card. Please advise in writing as to the current status of the above-captioned application.

Respectfully submitted,

BUCHANAN INGERSOLL &amp; ROONEY PC

Date: August 13, 2007

By:

  
Shawn B. Cage  
Registration No. 51522

P.O. Box 1404  
Alexandria, VA 22313-1404  
703 836 6620



**COPY**

Patent Response Postcard

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Inventor: Youn-joon Sung et al. Appln. No.: 10/813,157 Filing Date: March 31, 2004  
Docket No.: 1030681-000642 Working Atty.: Shawn B. Cageffm Date: May 8, 2007  
Title: LASER DIODE AND METHOD OF MANUFACTURING THE SAME USING SELF-ALIGN PROCESS

Dkt Clerk Initials

The following was/were received in the U.S. Patent and Trademark Office on the date stamped hereon:

Amendment or Response  
 Preliminary Amendment  
 Amendment/Reply Transmittal Letter  
 Petition for \_\_\_\_\_ Month Extension of Time  
 Submission of Formal Drawings w/\_\_\_\_\_ sheet(s) of drawings (Fig(s). 1-\_\_\_\_\_)  
 Request for Approval of Drawing Changes w/\_\_\_\_\_ sheet(s) of red ink drawings  
 Notice of Appeal  
 Appeal Brief  
 Request for Oral Hearing  
 Reply Brief  
 Response to Restriction Requirement or Election of Species  
 Terminal Disclaimer  
 Certificate Under 37 C.F.R. 3.73(b)

Transmittal Letter for Missing Parts of Application  
 Executed Declaration/Power of Attorney  
 Assignment/Assignment Recordation Form Cover Sheet (PTO-1595)  
 Submission of Certified Copy of Priority Document w/\_\_\_\_\_ certified copy(ies)  
 Information Disclosure Statement Transmittal w/\_\_\_\_\_ Information Disclosure Statement (PTO-1449)  
 Information Disclosure Statement w/\_\_\_\_\_ document(s)  
 Request for Continued Examination  
 Issue Fee Transmittal  
 Request for Corrected Notice of Recordation of Assignment w/Copy of Notice  
 Request for Corrected Filing Receipt w/copy of Official Filing Receipt  
 Status Inquiry  
 Request for Official Filing Receipt





Patent  
Attorney Docket No. 1030681-000642

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of )  
Youn-joon Sung et al. ) Group Art Unit: 2828  
Application No.: 10/813,157 ) Examiner: RORY B FINNEREN  
Filing Date: March 31, 2004 ) Confirmation No.: 4476  
Title: LASER DIODE AND METHOD OF )  
MANUFACTURING THE SAME )  
USING SELF-ALIGN PROCESS )

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**AMENDMENT/REPLY TRANSMITTAL LETTER**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Enclosed is a reply for the above-identified patent application.

- A Petition for Extension of Time is enclosed.
- \_\_\_\_\_ Terminal Disclaimer(s) and the  \$ 65  \$ 130 fee per Disclaimer due under 37 C.F.R. § 1.20(d) are enclosed.
- Also enclosed is/are: Petition to Withdraw Restriction Requirement Pursuant to 37 CFR §1.144 and Annotated and Replacements sheets of Figure 4A
- Small entity status is hereby claimed.
- Applicant(s) requests continued examination under 37 C.F.R. § 1.114 and enclose the  \$ 395  \$ 790 fee due under 37 C.F.R. § 1.17(e).
- Applicant(s) requests that any previously unentered after final amendments not be entered. Continued examination is requested based on the enclosed documents identified above.
- Applicant(s) previously submitted \_\_\_\_\_ on \_\_\_\_\_ for which continued examination is requested.
- Applicant(s) requests suspension of action by the Office until at least \_\_\_\_\_, which does not exceed three months from the filing of this RCE, in accordance with 37 C.F.R. § 1.103(c). The required fee under 37 C.F.R. § 1.17(i) is enclosed.
- A Request for Entry and Consideration of Submission under 37 C.F.R. § 1.129(a) (1809/2809) is also enclosed.

No additional claim fee is required.

An additional claim fee is required, and is calculated as shown below:

AMENDED CLAIMS					
	No. of Claims	Highest No. of Claims Previously Paid For	Extra Claims	Rate	Additional Fee
Total Claims	10	Minus 23=	0	x \$ 25 (1202)	\$ 0
Independent Claims	1	Minus 3=	0	x \$ 50 (1201)	0
If Amendment adds multiple dependent claims, add \$ 360 (1203)					\$ 0
<b>Total Claim Amendment Fee</b>					\$ 0
<input type="checkbox"/> Small Entity Status claimed - subtract 50% of Total Claim Amendment Fee					0
<b>TOTAL ADDITIONAL CLAIM FEE DUE FOR THIS AMENDMENT</b>					\$ 0

Charge \_\_\_\_\_ to Deposit Account No. 02-4800 for the fee due.

A check in the amount of \_\_\_\_\_ is enclosed for the fee due.

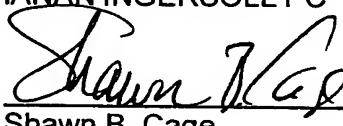
Charge \_\_\_\_\_ to credit card for the fee due. Form PTO-2038 is attached.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.20(d) and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BUCHANAN INGERSOLL PC

Date May 8, 2007

By:   
Shawn B. Cage  
Registration No. 51522

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703.836.6620



Patent  
Attorney's Docket No. 1030681-000642

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of ) **MAIL STOP PETITIONS**  
Youn-joon Sung et al. )  
Application No.: 10/813,157 ) Group Art Unit: 2828  
Filed: March 31, 2004 ) Examiner: MARCIA A. GOLUB  
For: LASER DIODE AND METHOD OF ) Confirmation No.: 4476  
MANUFACTURING THE SAME USING )  
SELF-ALIGN PROCESS )

 **COPY**

**PETITION TO WITHDRAW RESTRICTION REQUIREMENT PURSUANT TO 37  
C.F.R. §1.144**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicants hereby petition for review and withdrawal of the requirement restricting claims 1-23 into two inventions. Namely, claims 1-10 were restricted to a first invention drawn to a laser diode, and claims 11-23 were restricted to a second invention drawn to a method of manufacturing a laser diode. This requirement was set forth in an Office Action dated December 18, 2006. Applicants requested reconsideration and withdrawal of this requirement in a response filed January 17, 2007. The requirement was repeated and made final in an Office Action dated March 13, 2007.

MPEP §803 sets forth two criteria for a proper restriction requirement. The first being that the inventions must be independent or distinct as claimed. The second criterion establishes that there would be serious burden on the Examiner if restriction were not required. MPEP §811 adds, "the Examiner should make a proper requirement as early as possible in the prosecution, in the first action if possible, otherwise, as soon as the need for a proper requirement develops."

Regarding the first criterion, Applicants acknowledge that the inventions as suggested in the restriction may have distinct art classifications. However, even under this assumption, the importance of the first criterion is minimal when weighed against the prior search and examination of all claims in previous Office Actions.

Regarding the second criterion, Applicants respectfully submit that a serious burden does not exist because two previous office actions on the merits have been issued, and Applicants response has not provided a situation where a need for a restriction requirement developed. In other words, there can be no serious burden for the *continued* examination of the same subject matter.

In a non-final Office Action dated February 28, 2006, the subject matter recited in the originally filed claims 1-23 was searched and rejected under 35 U.S.C. §102. Applicants filed a response including a claim amendment that on May 23, 2006. In a second non-final Office Action issued on August 15, 2006 and in response to Applicants' claim Amendment, the subject matter recited in claims 1-23 was searched and rejected under 35 U.S.C. §103. Applicants point out that in each Office Action, the same prior art reference was used to reject the claims. In response to the second non-final Office Action, Applicants filed a Request for Reconsideration on November 7, 2006, which included no claim amendments.

Given the prosecution history, two factual assertions can be made with certainty. First, pending claims 1-23 have been searched and examined at least twice. Second, Applicants' Request for Reconsideration maintained the presentation of the claims prior to the second non-final Office Action. Hence, Applicants submit that no need has developed that justifies requiring a restriction of the claims.

Applicants acknowledge that the current Examiner who issued the Restriction Requirement is different from the previous Examiner who issued the two prior Office Actions. This development, however, should not justify a claim restriction. As stated in MPEP §704, "full faith and credit should be given to the search and action of the previous Examiner

unless there is a clear error in the previous action or knowledge of other prior art." Even if the previous Examiner could have properly restricted the claims prior to issuing the first Office Action, Applicants should not now be penalized for circumstances of which it had no control. In fact, each Office Action issued in this case has been supervised and endorsed by the same primary examiner. Regarding the supervision of assistant examiners, MPEP §707.01 states "...it is the duty of the primary examiner to review the application thoroughly...[t]he primary examiner may indicate the action to be taken, whether restriction or election of species to be required, or whether the claims are to be considered on their merits." Based on the prior office actions, the primary examiner apparently found no need to restrict the claims. These events provide further evidence that the search and consideration of all claims present no serious examination burden.

In response to Applicants traversal of the restriction, the current Examiner maintains the restriction on the basis that method claims 11-23 could be classified in a different class from the device claims 1-10, and thus examined in a different art unit (See Office Action dated March 13, 2007, pg. 2). Even assuming arguendo that this assertion is true, the previous Examiner seemingly has already searched the requisite classes and identified the most relevant art. The current Examiner has shown neither that "clear error" exists in the prior examination nor that knowledge of other prior art exists. Rather, it appears the current Examiner has disavowed the previous search and made the restriction final based merely on personal preference. Applicants find no evidence that "clear error" arises, when an examiner searches and examines claims that could be examined in a different art unit.

In sum, the subject matter recited in claims 1-23 has been searched and considered at least twice under the supervision of the same primary examiner. The current Examiner has not apparently given full faith and credit to the search by a previous Examiner nor identified clear errors with respect to the previous examination. Accordingly, Applicants submit that the requirement for restriction is improper. Withdrawal of the restriction

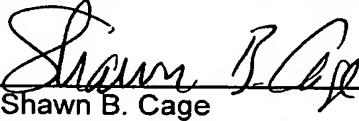
Petition to Withdraw Restriction Requirement  
Attorney's Docket No. 1030681-000642  
Application No. 10/813,157  
Page 4

requirement, as applied to claims 11-23, and reinstatement of these claims in the application is respectfully submitted to be in order.

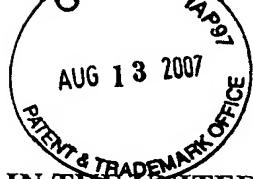
Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: May 8, 2007

By:   
Shawn B. Cage  
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703 836 6620



Patent  
Attorney's Docket No. 1030681-000642

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of ) Mail Stop Amendment  
Youn-joon Sung et al. )  
Application No.: 10/813,157 ) Group Art Unit: 2828  
Filed: March 31, 2004 ) Examiner: RORY B FINNEREN  
For: LASER DIODE AND METHOD OF ) Confirmation No.: 4476  
MANUFACTURING THE SAME )  
USING SELF-ALIGN PROCESS )  
)

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**AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the final Office Action dated March 13, 2007, please amend the above-identified patent application as follows:

**AMENDMENTS TO THE DRAWINGS:**

The attached drawing sheet includes changes to Fig. 4A. This sheet replaces the original sheet that includes Fig. 4A. In Replacement Sheet 1, Fig. 4a was amended to include a "Prior Art" legend.

Attachments:

One (1) Replacement Sheets

One (1) Annotated Sheet showing change

## REMARKS

This communication is a full and timely response to the final rejection dated March 13, 2007. By this communication, Figure 4a is amended. Claims 1-23 remain pending. Reconsideration and allowance of this application are respectfully requested.

### Drawing Amendment

On page 2 of the Office Action, the Patent Office suggested that Figure 4a be designated by a "Prior Art" legend. Applicants appreciate this suggestion and have amended Figure 4a accordingly.

### Rejections Under 35 U.S.C. §102

Claims 1-10 stand rejected under 35 U.S.C. §102(b) as anticipated by *Kozaki* (U.S. Patent Pub. No. 2002/00536760). Applicants respectfully traverse this rejection.

Applicants believe that the final rejection of claims 1-10 should be withdrawn because of clear errors exhibited in the Office Action.

First, in mapping the disclosure of *Kozaki* to the features of Applicants' claim 1, the Patent Office maps element 162 to Applicants' buried layer, and element 164 to Applicants' protected layer. *Kozaki* discloses that element 162 corresponds to a protective film that is formed on the side faces of a ridge stripe and the plane which continues there from (see *Kozaki* paragraph 171). Moreover, *Kozaki* discloses that element 164 corresponds to a multilayer dielectric film, which is formed on desired region that has been exposed by etching (see paragraph 173). Upon careful review, neither the protective file (162) nor the multilayer dielectric film (164) as taught by *Kozaki* exhibit properties or characteristics that are analogous to Applicants' claimed buried layer. Moreover, the Patent Office has failed to articulate why one of ordinary skill would interpret that Applicants' claimed structural

relationship between the buried layer and protective layer reads on the structural relationship of a protective film (162) and dielectric film (164) as taught in *Kozaki*.

As disclosed in Applicants' Specification, the buried layer is a passivation layer and the protective layer has an etching selectivity and adhesive property through the passivation layer. In contrast, it appears that *Kozaki* discloses that the protective layer 162 protects certain portions of the ridge during an etching process. While element 162 appears to exhibit properties that are similar to those of Applicants' claimed protective layer, there is seemingly no element disclosed by *Kozaki* that embodies the characteristics of Applicants' claimed buried layer. As a result, Applicants submit that the *Kozaki* publication fails to explicitly or implicitly disclose the structural relationship between the buried layer and the protective layer as recited in Applicants' claims, and thus does not anticipate Applicants' claim 1.

Applicants' second reason for finding error in the final rejection lies in the Patent Office's response to Applicants' previous arguments. Claim 1 recites, among other elements, an upper electrode formed on the protective layer to contact an upper surface of the ridge through the contact hole. On page 2 of the Office Action, the Patent Office states that when the preposition "on" is given its broadest interpretation, this term does not specify directionally where the electrode is located. Therefore, the Patent Office posits that the term "on the protective layer" can be interpreted to mean "on top of the protective layer" or "on the bottom of the protective layer."

Applicants are fully aware that during examination claims must be given their broadest reasonable interpretation. This "interpretation", however, must be consistent with Applicants' Specification. *Phillips v. AWH Corp.*, 415 F.3d 1403 75 USPQ2d 1321 (Fed. Cir. 2005). In *Phillips*, the Court found that when employing the "broadest reasonable interpretation" standard, the PTO determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest

**reasonable construction "in light of the specification as it would be interpreted of one of ordinary skill in the art."** *In Re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 [70 USPQ2d 1827] (Fed. Cir. 2004). Indeed, the rules of the PTO require that application claims must "conform to the invention as set forth in the remainder of the specification and the terms and phrases used in the claims must find clear support for anteceding basis in a description so that the meaning of the terms in the claims may be ascertainable by reference to the description." 37 CFR 1.75 (d)(1), 415 F.3d at 1316, 75 USPQ2d at 1329.

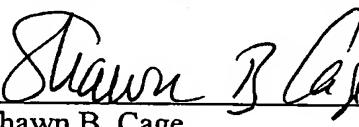
Applicants submit that the PTO has not followed the broadest reasonable interpretation standard set forth by the Federal Circuit. Particularly, Applicants' figures provide a representative structural relationship between each element of Applicants' device. Because the Specification gives clear and concise guidance as to how each feature of Applicants' device, as shown in the figures, is related, Applicants submit that any reasonable interpretation of the claimed upper electrode cannot include it being formed on the bottom of the protective layer as suggested. Stated differently, the broadest reasonable interpretation standard does not allow for arbitrarily rearranging the features recited in Applicants' claim to support a rejection. Accordingly, Applicants request that the rejection of claim 1 and its corresponding dependent claim under 35 U.S.C. §102 be withdrawn.

Based on at least the foregoing amendments and remarks, Applicant submits that claims 1-23 are allowable, and this application is in condition for allowance. Accordingly, Applicant requests a favorable examination and consideration of the instant application. In the event the instant application can be placed in even better form, Applicant requests that the undersigned attorney be contacted at the number below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: May 8, 2007

By:   
Shawn B. Cage  
Registration No. 51,522

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